



# UNITED STATES PATENT AND TRADEMARK OFFICE

*in*  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,077	11/18/2003	Harold L. Dunegan	DUNGN.008C1	4785

20995 7590 06/22/2004

KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614

EXAMINER
----------

MILLER, ROSE MARY

ART UNIT	PAPER NUMBER
----------	--------------

2856

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/716,077

Applicant(s)

DUNEGAN, HAROLD L.

Examiner

Rose M Miller

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 13, 14 and 16-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/22/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/R strictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9 and 11, drawn to a probe for acoustic emission detection of insect infestation, classified in class 73, subclass 587.
  - II. Claim 10, drawn to a piezoelectric transducer, classified in class 310, subclass 324.
  - III. Claims 12 and 15, drawn to an apparatus and method for detecting infestation, classified in class 73, subclass 602.
  - IV. Claim 13, drawn to an apparatus for detecting insect movement, classified in class 73, subclass 644.
  - V. Claim 14, drawn to method for detecting insects, classified in class 73, subclass 587.
  - VI. Claim 16, drawn to method of constructing a probe, classified in class 310, subclass 324.
  - VII. Claims 17-18, drawn to a system for determining the eradication of insects, classified in class 73, subclass 602.
  - VIII. Claims 19-21, drawn to a method of treating for insects, classified in class 73, subclass 570.
  - IX. Claim 22, drawn to an acoustic emission detector, classified in class 73, subclass 587.
2. The inventions are distinct, each from the other because of the following reasons:
3. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require

Art Unit: 2856

a thin layer of epoxy securing a plurality of polarized piezoelectric crystals together. The subcombination has separate utility such as performing as an acoustic emission detector for any type of acoustic emission.

4. Inventions III and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a waveguide rod of substantially solid material. The subcombination has separate utility such as providing an indication of acoustic emissions being coupled through contact with a test element/product.

5. Inventions IV and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a waveguide rod of substantially solid material. The subcombination has separate utility such as a touch probe for investigating the acoustic emissions of an automobile engine.

6. Inventions V and I are related as method of using a combination and a subcombination apparatus. Inventions in this relationship are distinct if it can be shown that (1) the method of the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the method does not require a waveguide rod of substantially solid

Art Unit: 2856

material. The subcombination has separate utility such as a touch probe for investigating acoustic emissions in multiple environments.

7. Inventions VI and I are related as process of making a subcombination of a product and the combinatorial product. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the combinational product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the combinational product can be made without drilling a hole through a piezoelectric crystal.

8. Inventions VII and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a waveguide rod. The subcombination has separate utility such as a touch probe for use in a diagnostic machine for an automobile engine.

9. Inventions VIII and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a probe with a waveguide. The subcombination has separate utility such as a touch probe for use in a diagnostic machine for an automobile.

Art Unit: 2856

10. Inventions I and IX are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as being used in diagnostic machine for an automobile. See MPEP § 806.05(d).

11. Inventions III and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a plurality of piezoelectric cylindrical crystals. The subcombination has separate utility such as an acoustic emission detector for any type of acoustic emission.

12. Inventions IV and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a plurality of piezoelectric cylindrical crystals. The subcombination has separate utility such as an acoustic emission detector for any type of acoustic emission.

13. Inventions V and II are related as combinatorial process and apparatus of the subcombination. The inventions are distinct if it can be shown that either: (1) the combinatorial process as claimed can be practiced by another materially different apparatus or by hand, or (2) the subcombination as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the subcombination can be used in an acoustic emission device monitoring roller bearing elements.

14. Inventions VI and II are related as process of making a product and a product similar to the one made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product claimed can be made in a materially different process that does not include drilling a hole through the piezoelectric elements.

15. Inventions VII and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a stack of cylindrically shaped piezoelectric elements. The subcombination has separate utility such as an acoustic emission detector in a roller bearing element system.

16. Inventions VIII and II are related as process for performing the combination and an apparatus for a subcombination. The inventions are distinct if it can be shown that either: (1) the process of the combination does not require the particulars of the subcombination, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the combination does not require a stack of cylindrically shaped piezoelectric elements.

17. Inventions II and IX are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such

Art Unit: 2856

as operating in an acoustic emission device for monitoring a roller bearing. See MPEP § 806.05(d).

18. Inventions III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as determining the presence of a defect in a roller bearing element by monitoring the high frequency and low frequency signals emitted by the roller bearing. See MPEP § 806.05(d).

19. Inventions V and III are related as a process for performing the combination and a subcombinatorial apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the combinatorial process as claimed does not require the particulars of the subcombination, or (2) the subcombinatorial apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the combinatorial method does not require the separation of the measured signals into a high frequency and a low frequency band.

20. Inventions III and VI are related as combination and process of making a subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination made has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a stack of piezoelectric crystals. The subcombination has separate utility such as monitoring acoustic emissions in a roller bearing assembly.

21. Inventions VII and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and



Art Unit: 2856

(2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a waveguide for detecting in-plane ultrasonic signals. The subcombination has separate utility such as monitoring for in-plane acoustic emissions in a boiler system.

22. Inventions VIII and III are related as method of using a combination and a subcombinational apparatus. Inventions in this relationship are distinct if it can be shown that (1) the method of using the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a waveguide for detecting in-plane ultrasonic signals. The subcombination has separate utility such as monitoring for in-plane acoustic emissions in a boiler system.

23. Inventions III and IX are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as monitoring in-plane acoustic emissions in a boiler system. See MPEP § 806.05(d).

24. Inventions V and IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process can be practiced by a system detecting any form of acoustic emission signals, not just in-plane acoustic emission signals.

Art Unit: 2856

25. Inventions IV and VI are related as combination and method of making a subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination made has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a stack of piezoelectric crystals. The subcombination has separate utility such as monitoring the emissions of a roller bearing assembly.

26. Inventions VII and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require the detection of in plane acoustic emission signals. The subcombination has separate utility such as monitoring for insect infestation before one is ever detected.

27. Inventions VIII and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require the detection of in plane acoustic emission signals. The subcombination has separate utility such as determining the presence of insects other than termites in the wood.

28. Inventions IV and IX are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed

Art Unit: 2856

does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a combination of waveguide and piezoelectric transducer that produces electrical signals in a frequency band of about 25-50 KHz that are substantially larger in amplitude than the amplitudes of acoustic noise product in said frequency band. The subcombination has separate utility such as monitoring for insects before they are actually detected.

29. Inventions V and VI are related as method of the combination and a method of making a subcombination. Inventions in this relationship are distinct if it can be shown that (1) the method of the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination made has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a stack of piezoelectric crystals. The subcombination has separate utility such as monitoring the acoustic emission signals of a roller bearing assembly for defects.

30. Inventions VII and V are related as combination and method of using a subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombinatorial method has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a waveguide inserted into the wood under test. The subcombinatorial method has separate utility such as monitoring for insects other than termites or in addition to termites.

Art Unit: 2856

31. Inventions VIII and V are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require the step of fastening a waveguide end into a hole drilled into the structure. The subcombination has separate utility such as monitoring for insects other than or in addition to the termites of the combination.

32. Inventions V and IX are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combinatorial method does not require the use of a piezoelectric transducer. The subcombination has separate utility such as monitoring for acoustic emissions other than from termites or other animals present.

33. Inventions VII and VI are related as combination and a method of making a subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination made as claimed for patentability, and (2) that the subcombination made has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a stack of piezoelectric crystals. The subcombination has separate utility such as monitoring the acoustic emissions of a roller bearing or boiler for defects or problems.

Art Unit: 2856

34. Inventions VIII and VI are related as combinatorial method and method of making subcombinatorial apparatus. Inventions in this relationship are distinct if it can be shown that (1) the combinatorial method as claimed does not require the particulars of the subcombination made for patentability, and (2) that the subcombination made has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a stack of piezoelectric crystals. The subcombination has separate utility such as monitoring the acoustic emissions of a roller bearing assembly or boiler for defects or problems.

35. Inventions IX and VI are related as combination and method of making a subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination made for patentability, and (2) that the subcombination made has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a stack of piezoelectric crystals. The subcombination has separate utility such as monitoring the acoustic emissions of a roller bearing assembly or boiler for defects or problems.

36. Inventions VIII and VII are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process can be practiced by another materially different apparatus such as a system which compiles all of acoustic emissions signals simultaneously instead of addressing each individual sensor in turn.

37. Inventions VII and IX are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed

Art Unit: 2856

does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a piezoelectric transducer as the acoustic emission detector. The subcombination has separate utility such as monitoring a bearing assembly or boiler for acoustic emissions.

38. Inventions VIII and IX are related as a combinatorial method and a subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combinatorial method as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the method does not require the use of a piezoelectric acoustic emission detector. The subcombination has separate utility such as monitoring a bearing assembly or boiler for acoustic emissions.

39. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

40. During a telephone conversation with Louis J. Knobbe on 1<sup>st</sup> June 2004 a provisional election was made without traverse to prosecute the invention of Group III, claims 12 and 15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-11, 13-14, and 16-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Information Disclosure Statement***

41. The information disclosure statement filed 22 March 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed.

The IDS failed to include copies of the German reference DE 2313833A and the two Non-patent Literature references cited (references 16 and 17) or to provide a statement that these references were provided in the Parent Application.

The IDS also failed to provide a concise explanation of the German reference as required.

However, as the Examiner found the German reference during her search of the prior art, the German reference has been considered and initialed.

The two Non-Patent Literature references have not been considered and have been crossed off the IDS.

Applicant is advised that an Information Disclosure Statement is not considered complete until such a time that all requirements have been met. Therefore, any new submissions should be accompanied with the appropriate copies, statements, and/or fees as necessary to provide for a complete Information Disclosure Statement.

### ***Specification***

42. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

43. Claim 12 is objected to because of the following informalities: Claim 12 is incomplete in that it fails to indicate why the processing means processes the received signals into a high frequency band and a low frequency band and then divides the peak

Art Unit: 2856

amplitudes within said high frequency band with the peak amplitude within said low frequency band. Is the ratio an indication of movement by the termites or destruction (i.e. eating) being performed by the termites? Clarification is necessary to fully determine the metes and bounds of the claimed invention. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

44. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

45. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by **Robbins et al. (US 5,285,688)**.

**Robbins et al.** discloses at column 3 lines 6-50 a method for detecting the presence of insects in wood comprising: drilling a hole (44) into said wood, fastening one end of a waveguide (bolt 22) into said hole; and using said waveguide to access stress waves created by termite or other insect activity. While **Robbins et al.** does not specifically mention accessing extensional in plane stress waves created by termite or other insect activity, it is inherent in the system of **Robbins et al.** that such waves be received as the waveguide embedded within the wood will pick up any and all stress waves generated by the insects, including both in plane waves and out of plane waves.

### ***Allowable Subject Matter***

46. Claim 12 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.

47. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest an apparatus for detecting the movement of insects comprising, in combination with the other recited elements,



Art Unit: 2856

means for processing in-plane ultrasonic signals into a high frequency band and a low frequency band and dividing the peak amplitude of the high frequency band with the peak amplitude of the low frequency band in order to provide an indication of the presence/movement of the insects.

### **Conclusion**

48. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Litzkow et al. (US 4,937,555)** discloses a piezoelectric apparatus and process for detection of insect infestations in an agricultural commodity.

**Minamide et al. (JP 08051908 A)** discloses a termite detector.


**Hickling et al. (US 5,616,845)** discloses an acoustic sensor system for insect detection.

**Otomo (US 5,877,422)** discloses a termite detection apparatus and termite alarm unit.

49. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Friday, 7:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RMM

20 June 2004



HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800